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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,677

02/20/2004

Kenichi Kitamura

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MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

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SUITE 370

ALEXANDRIA, VA 22314

EXAMINER

MYINT, DENNIS Y

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/781,677	Applicant(s) KITAMURA ET AL.	
	Examiner Dennis Myint	Art Unit 2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. The finality of the office action dated February 2, 2007, has been vacated.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the office action, dated August 22, 2006, has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 November 2006 has been entered.
3. The amendment filed on 21 November 2006 has been received and entered. Claims 1-2 and 22-25 are pending in this application. Claims 3-21 were cancelled. Claims 23-25 were newly added. Claims 1, 2, and 22 are independent claims.

Response to Arguments

4. Applicant's arguments filed on 21 November 2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 22 and 25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 (IV)(C)(2)((B))((2))(a) and (b) states that :

For an invention to be "useful" it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. MPEP § 2107 and Fisher, 421 F.3d at 1372, 76 USPQ2d at 1230 (citing the Utility Guidelines with approval for interpretation of "specific" and "substantial"). In addition, when the examiner has reason to believe that the claim is not for a practical application that produces a useful result, the claim should be rejected, thus requiring the applicant to distinguish the claim from the three 35 U.S.C. 101 judicial exceptions to patentable subject matter by specifically reciting in the claim the practical application. In such cases, statements in the specification describing a practical application may not be sufficient to satisfy the requirements for section 101 with respect to the claimed invention. Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application. In other words, if the specification discloses a practical application of a section 101 judicial exception, but the claim is broader than the disclosure such that it does not require a practical application, then the claim must be rejected.

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result.

As such independent claim 22 is rejected under U.S.C. 101 because The claims lack the necessary physical articles or objects to constitute a machine or a manufacture

within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim 25 is rejected under U.S.C. 101 because of its dependency on claim 22.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 1, 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer III et al., (hereinafter "Maurer") (U.S. Patent Application Publication No. 2003/0065780) in view of Marshall et al., (hereinafter "Marshall") (U.S. Patent Application Publication Number 2003/0135478) and further in view of Yanai et al., (hereinafter "Yanai") (U.S. Patent Number 5742792).

As per claim 1, Maurer is directed to a data processing method and teaches the limitations:

"generating a second database as a duplicate of a first database allowing access from a program and after completion of the generation, switching a program access allowance from the first database to the second database" (Figure 3: *BCV* and *STD* (e.g. DB Files); Paragraph 0060, i.e., *such as database transaction processing*; Paragraph 0112, i.e., *a data storage system includes a storage array having logical volumes or units that can be accessed by one or more clients via a switch and In the case where the first logical unit is no longer accessible, such as due to disk failure, the storage array can provide access to the copy of the first logical unit by the client by swapping the logical unit accessed by the host*),

"after switching the program access allowance, storing a history of a processing of the program to the second database as a processing history" (Paragraph 0106, i.e., *... then the information related to the data may also be backed up..... and archives/redo logs*), and

"updating the first database based on the processing history" (Paragraph 0107-0109, i.e., *redo log files, and Control files contain information in the Oracle database, including information that describes the instance where the data files and log files reside and This is where information that will be used in a restore operation is kept.*) and

"switching the program access allowance from the second database to the first database" (Paragraph 0112, i.e. *swapping the logical unit* and Paragraph 0055, i.e. *Mirrors can be synchronized in either direction (i.e., from the BCV to the standard or visa versa)*).

As pointed in the prior office action (Final Office Action of 08/22/2006), when program access (control) is switched from the first database, any operation could be

performed on the first database, while program access (control) is at the second database, such as reorganization of the first database or, as Maurer teaches, the storage of the first database might have been down.

The system and method of Maurer is not just a general synchronization system and method. Rather, Maurer teaches swapping logical units of a storage system wherein a first volume (first database) can be mirrored to a second volume (second database) and program/application access is switched to said second volume (second database) so that said second volume (second database) acts in place of the first volume (first database), accepting updates (Paragraph 0060, i.e., *such as database transaction processing*; Paragraph 0112, i.e., *a data storage system includes a storage array having logical volumes or units that can be accessed by one or more clients via a switch and In the case where the first logical unit is no longer accessible, such as due to disk failure, the storage array can provide access to the copy of the first logical unit by the client by swapping the logical unit accessed by the host*). As necessary, the method and system of Maurer could switch program/application back to the first volume (Paragraph 0112, i.e. *swapping the logical unit* and Paragraph 0055, i.e. *Mirrors can be synchronized in either direction (i.e., from the BCV to the standard or visa versa)*). The relevant feature of the Maurer patent to the instant application is the feature of switching program access between databases.

Maurer does not explicitly teach the limitations: "allowing a predetermined input/output access to the first database in parallel with the storing, the processing history being stored during the execution of the input output access", during the input/output access ", and "upon completion of the updating of the first database

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according to the processing history stored (based on the processing history) during input/output access” .

On the other hand, Marshall teaches the limitations: “allowing a predetermined input/output access to the first database (in parallel with the storing), the processing history being stored during the execution of the input output access””, “ and “upon completion of the updating of the first database according to the processing history stored” (Paragraph 0038, i.e., *According to the present disclosure, all updates to the database that occur during reorganization of database can be captured and stored into data spaces for later replay to the new database* and Paragraph 0011, i.e., *online reorganization of an existing database that occurs while read and update activity of the existing database continues may include unloading the existing database, reloading the existing database to a shadow database, building shadow database indexes, capturing updates for the existing database, taking the existing database offline, finalizing the shadow database with the any remaining updates when the existing database is taken offline, and placing the finalized shadow database online*) .

Additionally, Yanai teaches the limitation:

“(allowing a predetermined input/output access to the first database) in parallel and concurrently” (Figure 14 and Figure 17; Column 6 Line 59-61, i.e., *migrating a volume concurrent with host access to the volume* and Abstract of Yanai specification). Yanai teaches a method and system for remote data mirroring, wherein, in an active mode migration mode, host processing of a primary volume (the program processing to the first or second database) is concurrent with migration to a secondary volume (the

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predetermined processing to the first database (Column 6 Line 59-61, and "Abstract" of Yanai et al. specification).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the method of Maurer for switching program access back and forth between database volumes with the method of Marshall for storing updates while databases are being reorganized for updating the reorganized database after the process of reorganization is finished and the method of Yanai, which teaches allowing program access to a database while a restore/mirror/update is being performed on a different database, based on the restore log/history on the database which currently allows program access so that the combined method would switch program access from a first database to a second database while the first database is being recognized, save updates which occur during the reorganizing of the first data for updating the first database when the reorganization process is finished, and allow input/output access to the first database in parallel with the storing. One would have been motivated to do so in order to *reduce this outage or downtime* (Marshall, Paragraph 0011) and to do so in order provide a *data processing system, which automatically and asynchronously, with respect to a first host system, generates and maintains a back-up or "mirrored" copy of a primary storage device....* (Yanai, Column 2 Line 19-27).

Claims 2 and 22 are rejected on the same basis as claim 1.

9. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer in view of Marshall, further in view of Yanai and further in view of Janssen (U.S. Patent Application Publication Number 2003/0163510).

As per claim 23, Maurer in view of Marshall and further in view of Yanai as applied to claim 1 teaches the limitations: "executing said input/output access to the first database in parallel with the storing" (Maurer in view of Yanai), and "wherein the replica operation mode is a mode in which program access allowance has been switched from the first database to the second database" (Paragraph 0112, i.e. *swapping the logical unit* and Paragraph 0055, i.e. *Mirrors can be synchronized in either direction* (i.e., from the BCV to the standard or visa versa)).

However, Maurer in view of Marshall and further in view of Yanai as applied to claim 1 does not explicitly teach the limitations: "determining whether the input/output access to the first database in a replica operation mode is allowed for the program seeking the input/output access", "if it is determined that input/output access to the first database in a replica operation is not allowed for said program, causing an error and disabling access to the first database", "wherein said step of determining whether the input/output access to the first database in a replica operation mode is allowed includes a step of reading an access allowance flag from a table using the name of the program seeking the input/output access as a key", and "wherein the access allowance flag indicates whether the input/output access to the first database is allowed for the program seeking the input/output access".

On the other hand, Lawrence teaches the limitations:

"determining whether the input/output access to the first database in a replica operation mode is allowed for the program seeking the input/output access" (Janssen, Paragraph 0008, i.e., *a database of tasks and a user-specific list of allowed tasks, comprising allowed application programs, configuring the list of allowed tasks on the basis of the user database and the database of tasks, detecting a command to execute a task, and preventing execution of tasks that not on the list of allowed tasks*), "if it is determined that input/output access to the first database in a replica operation is not allowed for said program, causing an error and disabling access to the first database" (Janssen, Figure 3, i.e., *Compare to List, always terminate, terminate task*), "wherein said step of determining whether the input/output access to the first database in a replica operation mode is allowed includes a step of reading an access allowance flag from a table using the name of the program seeking the input/output access as a key" (Paragraph 0008, i.e., *a database of tasks and a user-specific list of allowed tasks, comprising allowed application programs*) and "wherein the access allowance flag indicates whether the input/output access to the first database is allowed for the program seeking the input/output access" (Janssen, Paragraph 0008, i.e., *a database of tasks and a user-specific list of allowed tasks, comprising allowed application programs, configuring the list of allowed tasks on the basis of the user database and the database of tasks, detecting a command to execute a task, and preventing execution of tasks that not on the list of allowed tasks*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of using a list of allowed programs to access

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databases, as taught by Janssen to the method of Maurer in view of Marshall and further in view of Yanai as applied to claim 1 so that the resultant method would comprising determining input/output access to the first database by programming seeking input/output access to said first database. One would have been motivated to do so simply to establish security of databases (which is well known in the art).

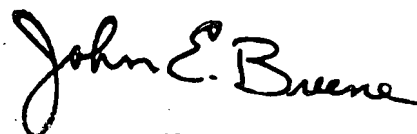
Claims 24 and 25 are rejected on the same basis as claim 23.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30 AM - 5:30 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-5629. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Myint
Examiner
AU-2162



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